IN THE CLAIMS

Please amend the claims as indicated by the amended claim set below.

1. (Previously Presented) A catheter for use in a blood vessel, comprising:

an elongate body having an axis, a lumen along said axis, a proximal opening at one end, connected to the lumen and a front tip at a distal end of the body;

an elongate body section, wherein said elongate body is configured for axial motion of at least 50 mm relative to said second elongate body section; and

an elongate hydraulic fluid column in said lumen and adapted to apply a pushing force to said front tip in a distal direction, said force being applied at an application point, said force being suitable for extending said tip at least 50 mm relative to said elongate body.

2. (Original) A catheter according to claim 1, wherein said application point is nearer said front tip than said proximal opening.

3. (Currently Amended) A catheter according to claim 1 ~~or claim 2~~, wherein said proximal opening is adapted to be outside a human body, when the catheter is in use.

4. (Currently Amended) A catheter according to claim 1 ~~any of claims 1-3~~, wherein said catheter is configured so that said liquid material does not drain into said blood vessel.

5. (Currently Amended) A catheter according to claim 1 ~~any of claims 1-4~~, wherein said column is adapted to be advanced from outside a body.

6. (Currently Amended) A catheter according to claim 1 ~~any of claims 1-5~~, wherein said body comprises a collapsed tube which extends from said tip to outside of said body and which said pushing force extends collapsed tube.

7. (Currently Amended) A catheter according to claim 1 ~~any of claims 1-6~~, wherein said tip pulls along a portion of said catheter, having a length of at least 5 times a diameter of the catheter, said length being pulled by said tip when pushing force is applied to said tip.

8. (Currently Amended) A catheter according to claim 1~~any of claims 1-5~~, wherein said body comprises a first, inner, tube and a second, outer tube, said tubes at least partially axially overlapping, wherein said pushing force extends one tube relative to the other tube.

9. (Original) A catheter according to claim 8, wherein said tip pulls at least a portion of said one tube with it when pushing force is applied to said tip.

10. (Original) A catheter according to claim 9, wherein said pulled section is too soft to be reliably pushed a distance of more than 500 mm in a human body, when the catheter is in use.

11. (Currently Amended) A catheter according to claim 9~~any of claims 9-10~~, wherein said tip pulls along a tube other than said tubes when pushing force is applied to said tip.

12. (Currently Amended) A catheter according to claim 9~~any of claims 9-11~~, wherein at least a portion of said one tube is adapted to be stored outside a human body when the catheter is in use and extends out of a catheter base of said catheter.

13. (Currently Amended) A catheter according to claim 9~~any of claims 9-11~~, wherein at least a portion of said one tube is adapted to be stored outside a human body, when the catheter is in use, in a configuration having a shortened axial dimension.

14. (Currently Amended) A catheter according to claim 8~~any of claims 8-13~~, wherein said inner tube extends when said force is applied.

15. (Currently Amended) A catheter according to claim 8~~any of claims 8-13~~, wherein said outer tube extends when said force is applied.

16. (Currently Amended) A catheter according to claim 8~~any of claims 8-13~~, wherein only one of said inner and said outer tubes substantially extends when said force is applied.

17. (Currently Amended) A catheter according to claim 8~~any of claims 8-16~~, wherein said fluid column is carried between said two tubes.

18. (Currently Amended) A catheter according to claim 8~~any of claims 8-16~~, wherein said fluid column is carried within the inner tube.

19. (Currently Amended) A catheter according to claim 8~~any of claims 8-18~~, comprising a tool attached at said tip.

20. (Original) A catheter according to claim 19, wherein said tool comprises a balloon attached at said tip.

21. (Original) A catheter according to claim 20, comprising a separate tube with a lumen for inflating said balloon.

22. (Original) A catheter according to claim 20, wherein said balloon is attached to a metallic inflation tube.

23. (Original) A catheter according to claim 20, wherein said inner tube serves as a lumen for inflating said balloon.

24. (Original) A catheter according to claim 23, wherein said inner tube serves as a lumen for inflating said balloon and not for said fluid column.

25. (Original) A catheter according to claim 20, wherein said balloon is inflated via a lumen which carries said fluid column.

26. (Original) A catheter according to claim 25, wherein said balloon is inflated using a higher pressure than used for extending said catheter.

27. (Original) A catheter according to claim 25, comprising a valve at said balloon for selectively allowing liquid flow into said balloon.

28. (Original) A catheter according to claim 27, wherein said valve is a pressure sensitive valve.

29. (Original) A catheter according to claim 27, wherein said valve is an externally actuated valve.

30. (Original) A catheter according to claim 29, wherein said valve is a stop valve in which a block is retracted from a port to said balloon to allow fluid under pressure to enter the balloon.

31. (Original) A catheter according to claim 29, wherein said valve is a rotating stop valve having at least two configurations, and in which a block is rotated from one configuration to a second one of said configurations to selectively seal or not seal a port to said balloon.

32. (Original) A catheter according to claim 21, wherein said balloon inflation tube is adapted to be stored outside a human body, when the catheter is in use.

33. (Original) A catheter according to claim 32, wherein said tube is stored in an axially collapsed state.

34. (Currently Amended) A catheter according to claim 8~~any of claims 8-33~~, wherein said tube is adapted to extend at least 50 mm.

35. (Currently Amended) A catheter according to claim 8~~any of claims 8-33~~, wherein said one tube is adapted to extend at least 150 mm.

36. (Currently Amended) A catheter according to claim 8~~any of claims 8-33~~, wherein said one tube is adapted to extend at least 250 mm.

37. (Currently Amended) A catheter according to claim 8~~any of claims 8-33~~, wherein said one tube is adapted to extend no more than 500 mm.

38. (Currently Amended) A catheter according to claim 8~~any of claims 8-33~~, comprising at least one stop which prevents relative motion between the two tubes greater than a pre-set distance.

39. (Original) A catheter according to claim 38, wherein at least one of said at least one stop is outside of said body.

40. (Original) A catheter according to claim 38, wherein at least one of said at least one stop is not in contact with said fluid.

41. (Original) A catheter according to claim 38, wherein said at least one stop comprises a wire extending out of said catheter and at least one movable brake section mounted on said wire.

42. (Original) A catheter according to claim 38, wherein said stop, when engaged, prevents liquid flow therethrough.

43. (Original) A catheter according to claim 38, wherein said stop, when engaged, does not prevent liquid flow therethrough.

44. (Original) A catheter according to claim 38, wherein said stop, is located within 50 mm of a proximal end of the extending tube.

45. (Original) A catheter according to claim 38, wherein said stop, is located at a distance of at least 50 mm from a proximal end of the extending tube.

46. (Original) A catheter according to claim 38, wherein when said tube is fully extended, said stop is located at a distal end of the non-extending tube.

47. (Original) A catheter according to claim 38, wherein when said tube is fully extended, said stop is located at a position spaced less than 50 mm from a distal end of the non-extending tube.

48. (Original) A catheter according to claim 38, comprising a plurality of axially spaced stops.

49. (Original) A catheter according to claim 38, wherein said stop is an element axially shorter than 5 mm.

50. (Original) A catheter according to claim 38, wherein said stop is an element axially longer than 5 mm.

51. (Currently Amended) A catheter according to claim 8~~any of claims 8-50~~, comprising at least one seal between said tubes.

52. (Original) A catheter according to claim 51, wherein said at least one seal is adapted for a particular outer tube inner diameter.

53. (Original) A catheter according to claim 51, wherein said at least one seal is adapted for a range of outer tube inner diameters.

54. (Original) A catheter according to claim 51, wherein said at least one seal comprises a plurality of axial spaced seals.

55. (Original) A catheter according to claim 51, wherein said at least one seal comprises only a single seal.

56. (Original) A catheter according to claim 51, wherein said at least one seal acts as a stop for preventing over-extension of said one tube.

57. (Currently Amended) A catheter according to claim 8~~any of claims 8-56~~, comprising an extension limiter which prevents steps of extension greater than a pre-set distance.

58. (Original) A catheter according to claim 57, wherein said pre-set extension step limitation is user-settable.

59. (Currently Amended) A catheter according to claim 8~~any of claims 8-58~~, comprising a lock configured to selectively lock said inner tube to said outer tube and preventing motion.

60. (Currently Amended) A catheter according to claim 8~~any of claims 8-59~~, comprising a lock configured to selectively couple said other tube to said body.

61. (Currently Amended) A catheter according to claim 8~~any of claims 8-60~~, comprising a pressure valve configured to release pressure of said working fluid above a certain liquid pressure.

62. (Currently Amended) A catheter according to claim 8~~any of claims 8-61~~, comprising a controller configured to control extension of said one tube.

63. (Original) A catheter according to claim 62, wherein said controller is adapted to extend said tube by a controlled amount.

64. (Original) A catheter according to claim 62, wherein said controller is adapted to extend said tube by setting a pressure level to be achieved in said liquid.

65. (Original) A catheter according to claim 62, wherein said controller is adapted to advance said catheter.

66. (Original) A catheter according to claim 62, wherein said controller is adapted to synchronize a locking of said catheter with inflation of a balloon portion of said catheter.

67. (Original) A catheter according to claim 62, wherein said controller is adapted to retract said tube relative to said catheter.

68. (Original) A catheter according to claim 67, wherein said controller is adapted to synchronize said retraction with advancing of said catheter.

69. (Currently Amended) A catheter according to claim 8~~any of claims 8-68~~, comprising a guiding sheath surrounding said tubes.

70. (Currently Amended) A catheter according to claim 8~~any of claims 8-69~~, comprising a guide wire, wherein said catheter is adapted to ride on said guide wire.

71. (Original) A catheter according to claim 70, wherein said catheter is configured so that said guide wire passes through said inner tube to outside a human body, when the catheter is in use.

72. (Original) A catheter according to claim 70, wherein said catheter is configured so that said guide wire passes between said inner tube and said outside tube to outside a human body, when the catheter is in use.

73. (Original) A catheter according to claim 70, wherein said catheter is configured so that said guide wire passes outside of said outside tube to outside a human body, when the catheter is in use.

74. (Original) A catheter according to claim 70, wherein said catheter is configured so that said guide wire passes outside of a guiding sheath to outside a human body, when the catheter is in use.

75. (Original) A catheter according to claim 70, comprising a balloon at said tip.

76. (Original) A catheter according to claim 75, wherein said guide wire passes through an inflation lumen of said balloon.

77. (Original) A catheter according to claim 75, wherein said guide wire has a proximal exit from said balloon adjacent said balloon.

78. (Original) A catheter according to claim 77, wherein said balloon has a thick base from which said guide wire exits.

79. (Original) A catheter according to claim 77, wherein said exit is less than 20 mm from said balloon.

80. (Original) A catheter according to claim 77, wherein said guide wire passes within an inflation lumen of said balloon.

81. (Original) A catheter according to claim 75, wherein said guide wire exits said catheter from said extending tube at a point distal from a most distal point of said non-extending tube.

82. (Original) A catheter according to claim 75, wherein said guide wire exits said catheter from said extending tube at a point proximal to a most distal point of said non-extending tube.

83. (Original) A catheter according to claim 75, wherein said guide wire passes through a seal between the two tubes.

84. (Original) A catheter according to claim 75, wherein said guide wire passes a through a liquid path of said column in said catheter.

85. (Original) A catheter according to claim 75, wherein said guide wire passes only outside of a liquid path of said column in said catheter.

86. (Currently Amended) A catheter according to claim 8~~any of claims 8-85~~, wherein said inner tube comprises a standard balloon catheter, not manufactured for fluid control and wherein said liquid is carried between said outer tube and said standard balloon catheter.

87. (Currently Amended) A catheter according to claim 8~~any of claims 8-85~~, wherein said inner tube comprises a standard balloon catheter having an adjustable seal mounted thereon, and wherein said liquid is carried between said outer tube and said standard balloon catheter.

88. (Original) A catheter according to claim 87, wherein said outer tube is a guiding catheter.

89. (Currently Amended) A catheter according to claim 8~~any of claims 8-88~~, wherein said outer tube has an outer diameter of less than 3 mm.

90. (Currently Amended) A catheter according to claim 8~~any of claims 8-88~~, wherein said outer tube has an outer diameter of less than 2 mm.

91. (Currently Amended) A catheter according to claim 8~~any of claims 8-88~~, wherein said outer tube has an outer diameter of less than 1 mm.

92. (Currently Amended) A catheter according to claim 8~~any of claims 8-91~~, wherein said inner tube has an outer diameter of less than 1.5 mm.

93. (Currently Amended) A catheter according to claim 8~~any of claims 8-91~~, wherein said inner tube has an outer diameter of less than 0.5 mm.

94. (Currently Amended) A catheter according to claim 1~~any of claims 1-93~~, wherein said application point is less than 500 mm from a most distal point of said catheter.

95. (Currently Amended) A catheter according to claim 1~~any of claims 1-93~~, wherein said application point is less than 350 mm from a most distal point of said catheter.

96. (Currently Amended) A catheter according to claim 1~~any of claims 1-93~~, wherein said application point is less than 70 mm from a most distal point of said catheter.

97. (Currently Amended) A catheter according to claim 1~~any of claims 1-93~~, comprising an offset element between said application point and said tip, which application point conveys said force from said column towards said tip.

98. (Currently Amended) A catheter according to claim 1~~any of claims 1-97~~, comprising a push wire adapted to apply a second force to said tip.

99. (Original) A catheter according to claim 98, wherein said push wire applies said second force at a substantially same axial position as said application point.

100. (Original) A catheter according to claim 98, comprising a controller configured to allow a short advance of said wire, suitable for passing a narrowing in a blood vessel.

101. (Currently Amended) A catheter according to claim 1~~any of claims 1-100~~, comprising a base hub adapted to remain outside a human body, when the catheter is in use.

102. (Original) A catheter according to claim 101, wherein said base hub has only a single port for liquid pressure.

103. (Original) A catheter according to claim 101, wherein said base hub has a plurality of ports for liquid pressure.

104. (Original) A catheter according to claim 103, wherein at least one of said ports has a cover adapted to remain closed when fluid inside said port is at 5 atmospheres of pressure or more.

105. (Original) A catheter according to claim 101, wherein said base hub comprises a pressure release valve.

106. (Original) A catheter according to claim 101, wherein said base hub comprises a port for a guide wire.

107. (Original) A catheter according to claim 101, wherein said base hub comprises a port for a pushing wire.

108. (Original) A catheter according to claim 101, wherein said base hub comprises a port for a valve control wire.

109. (Original) A catheter according to claim 101, wherein said base hub comprises a port for an extension restricting wire.

110. (Original) A catheter according to claim 109, wherein said port is configured to lock said wire when said base is pressurized above a pre-set pressure value.

111. (Original) A catheter according to claim 101, wherein said base hub comprises a selector configured for selecting which of a plurality of lumens of the catheter fluid pressure will be coupled to.

112. (Original) A catheter according to claim 101, wherein said base hub comprises a closable opening suitable for selectable user access to a lumen of the catheter through the door.

113. (Original) A catheter according to claim 112, wherein said opening is adapted to be quickly opened by hand.

114. (Original) A catheter according to claim 101, wherein said base hub includes a catheter storage section having a length, wherein said length is less than 80% of a length of a catheter section stored therein.